

PATENT COOPERATION TREATY

PCT

INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

Applicant's or agent's file reference RLL-347WO	FOR FURTHER ACTION see Form PCT/ISA/220 as well as, where applicable, item 5 below.	
International application No. PCT/IB2004/000850	International filing date (day/month/year) 22/03/2004	(Earliest) Priority Date (day/month/year) 21/03/2003
Applicant RANBAXY LABORATORIES LIMITED		

This International Search Report has been prepared by this International Searching Authority and is transmitted to the applicant according to Article 18. A copy is being transmitted to the International Bureau.

This International Search Report consists of a total of 5 sheets.

It is also accompanied by a copy of each prior art document cited in this report.

1. Basis of the report

a. With regard to the **language**, the international search was carried out on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.

The international search was carried out on the basis of a translation of the international application furnished to this Authority (Rule 23.1(b)).

b. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, see Box No. I.

2. **Certain claims were found unsearchable** (See Box II).

3. **Unity of invention is lacking** (see Box III).

4. With regard to the **title**,

the text is approved as submitted by the applicant.

the text has been established by this Authority to read as follows:

PROCESS FOR THE PREPARATION OF 7- (P-HYDROXYPHENYLGLYCLYAMIDO) CEPHEM COMPOUNDS

5. With regard to the **abstract**,

the text is approved as submitted by the applicant.

the text has been established, according to Rule 38.2(b), by this Authority as it appears in Box No. IV. The applicant may, within one month from the date of mailing of this international search report, submit comments to this Authority.

6. With regards to the **drawings**,

a. the figure of the **drawings** to be published with the abstract is Figure No. _____

as suggested by the applicant.

as selected by this Authority, because the applicant failed to suggest a figure.

as selected by this Authority, because this figure better characterizes the invention.

b. none of the figures is to be published with the abstract.

INTERNATIONAL SEARCH REPORT

National Application No
PCT/IB2004/000850

A. CLASSIFICATION OF SUBJECT MATTER

IPC 7 C07D501/04 C07D501/22 A61K31/545 A61P31/04

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 C07D A61K A61P

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, BEILSTEIN Data, WPI Data, PAJ, CHEM ABS Data

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category ^a	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 3 899 394 A (WILLNER DAVID ET AL) 12 August 1975 (1975-08-12) Abstract; examples 1-3; claims. -----	22-28
X	US 3 940 354 A (HEYMES RENE ET AL) 24 February 1976 (1976-02-24) Abstract; example 2, in particular steps J and K; claim 4. -----	22,24-28
X	US 3 988 450 A (JAMES BRIAN GEORGE) 26 October 1976 (1976-10-26) Abstract; example 3 resulting in compound XVII according to column 14; claims. -----	22,24-28
X	US 4 139 702 A (BROGGI RENATO ET AL) 13 February 1979 (1979-02-13) Abstract; example 9; claims 1 and 4. ----- -/-	22-28



Further documents are listed in the continuation of box C.



Patent family members are listed in annex.

^a Special categories of cited documents :

- "A" document defining the general state of the art which is not considered to be of particular relevance
- "E" earlier document but published on or after the international filing date
- "L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
- "O" document referring to an oral disclosure, use, exhibition or other means
- "P" document published prior to the international filing date but later than the priority date claimed

- "T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
- "X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
- "Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.
- "&" document member of the same patent family

Date of the actual completion of the international search

20 September 2004

Date of mailing of the international search report

06/10/2004

Name and mailing address of the ISA

European Patent Office, P. B. 5818 Patentlaan 2
NL - 2280 HV Rijswijk
Tel. (+31-70) 340-2040, Tx. 31 651 epo nl,
Fax: (+31-70) 340-3016

Authorized officer

Weisbrod, T

INTERNATIONAL SEARCH REPORT

 National Application No
 PCT/IB2004/000850

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 4 148 817 A (WRIGHT IAN G) 10 April 1979 (1979-04-10) Abstract; column 6, lines 63-64; examples 1-3; claims. -----	22-28
X	KLEEMANN, A.; ENGEL, J.: "Pharmaceutical Substances; Synthesis, Patents, Application; A-M; 4th ed." 2001, THIEME, STUTTGART, NEW YORK, XP002296968 Pages 368-371 (Cefadroxil, Cefalexin), 376-377 (Cefatrizine), and 396-398 (cis-Cefprozil). -----	22-28
Y	KEMPERMANN, G. J. ET AL.: "Synthesis of Cephalosporin-Type Antibiotics by Coupling of Their beta-Lactam Nucleus and Racemic Amino Acid Side Chains Using a Clathration-Induced Asymmetric Transformation" EUR. J. ORG. CHEM., 2001, pages 1817-1820, XP009036646 Page 1818, schemes 1 and 2; page 1820, "Synthesis of Cefadroxil". -----	1-21
X	JP 57 185291 A (TOUSHIN SEIYAKU KK) 15 November 1982 (1982-11-15) the whole document -----	1-28
X	HUANG, R. ET AL: "Synthesis of Cefadroxil" ZHONGGUO YIYAO GONGYE ZAZHI, vol. 21, no. 8, 1990, pages 343-345, XP009036672 the whole document -----	1-28
E	WO 2004/035593 A (DAS GAUTAM KUMAR ; DESHPANDE PRAMOD NARAYAN (IN); ORCHID CHEMICALS & P) 29 April 2004 (2004-04-29) Abstract; page 4, scheme 1; page 5, example 1; claims. -----	1-28
E	WO 2004/039812 A (DESHPANDE PANDURANG BALWANT ; KONDA RAMESH ATHMARAM (IN); GURUSAMY KUM) 13 May 2004 (2004-05-13) Abstract; page 5, scheme 2: reaction sequence V, XII, XIII, I; pages 9-10, example 1, step vi; claims. -----	1-28
Y	CASTELLVI, J. C. ET AL.: "Highly catalytic species in the formation of symmetrical anhydrides and mixt anhydrides" AFINIDAD, vol. 43, 1986, pages 421-424, XP009036673 the whole document -----	1-21

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/IB2004/000850

Patent document cited in search report		Publication date		Patent family member(s)	Publication date
US 3899394	A	12-08-1975		DK 65275 A FI 750437 A JP 1142872 C JP 50123886 A JP 57033037 B SE 7501740 A AR 203636 A1 AR 205560 A1 AR 203896 A1 AR 205561 A1 AT 343634 B AT 423875 A AT 332549 B AT 423975 A AT 331397 B AT 1083073 A AU 6384773 A BE 808924 A1 BG 21234 A3 BG 21233 A3 BG 21601 A3 CA 1032961 A2 CH 602760 A5 CS 192598 B2 DD 110664 A5 DD 116602 A5 DE 2364192 A1 DK 527474 A ES 421707 A1 ES 444926 A1 ES 444927 A1 FR 2211216 A1 FR 2267307 A1 GB 1460916 A GB 1460915 A GB 1460914 A HU 167560 B HU 169451 B IE 39782 B1 IL 43913 A IL 50774 A IN 143628 A1 IN 143629 A1 IN 139259 A1 JP 51091282 A JP 1239712 C JP 51091224 A JP 59012661 B JP 1275485 C JP 51091283 A	27-10-1975 22-08-1975 13-04-1983 29-09-1975 14-07-1982 22-08-1975 30-09-1975 14-05-1976 31-10-1975 14-05-1976 12-06-1978 15-10-1977 11-10-1976 15-01-1976 25-08-1976 15-11-1975 26-06-1975 20-06-1974 20-03-1976 20-03-1976 20-07-1976 13-06-1978 31-07-1978 31-08-1979 05-01-1975 05-12-1975 27-06-1974 26-05-1975 16-09-1976 16-11-1977 16-04-1977 19-07-1974 07-11-1975 06-01-1977 06-01-1977 06-01-1977 28-11-1975 28-11-1976 03-01-1979 31-08-1977 31-08-1977 07-01-1978 07-01-1978 29-05-1976 10-08-1976 13-11-1984 10-08-1976 24-03-1984 31-07-1985 10-08-1976
US 3940354	A	24-02-1976		FR 2215939 A1 AT 328616 B AT 69474 A AU 6499574 A BE 810400 A1 CA 1008845 A1 CH 595390 A5	30-08-1974 25-03-1976 15-06-1975 31-07-1975 30-07-1974 19-04-1977 15-02-1978

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/IB2004/000850

Patent document cited in search report	Publication date	Patent family member(s)		Publication date
US 3940354	A	CS DD DE ES GB HU IE IL JP LU NL SU US ZA	178910 B2 109391 A5 2404664 A1 422753 A1 1426541 A 167954 B 39543 B1 44027 A 50046686 A 69278 A1 7401303 A 563918 A3 4053597 A 7400443 A	31-10-1977 05-11-1974 01-08-1974 16-04-1976 03-03-1976 28-01-1976 08-11-1978 31-10-1978 25-04-1975 25-09-1974 02-08-1974 30-06-1977 11-10-1977 26-03-1975
US 3988450	A	26-10-1976	GB	1505345 A
US 4139702	A	13-02-1979	IT CA DE FR GR IL JP	1065387 B 1077029 A1 2755902 A1 2374326 A1 60709 A1 53624 A 53098990 A
US 4148817	A	10-04-1979	NONE	
JP 57185291	A	15-11-1982	KR JP	8201564 A 60043073 B
WO 2004035593	A	29-04-2004	WO US	2004035593 A1 2004077849 A1
WO 2004039812	A	13-05-2004	WO US	2004039812 A1 2004087786 A1